ABSTRACT

A packet processing system architecture and method are provided. According to a first aspect of the invention, a plurality of quality of service indicators are provided for a packet, each with an assigned priority, and a configurable priority resolution scheme is utilized to select one of the quality of service indicators for assigning to the packet. According to a second aspect of the invention, wide data paths are utilized in selected areas of the system, while avoiding universal utilization of the wide data paths in the system. According to a third aspect of the invention, one or more stacks are utilized to facilitate packet processing. According to a fourth aspect of the invention, a packet size determiner is allocated to a packet from a pool of packet size determiners, and is returned to the pool upon or after determining the size of the packet. According to a fifth aspect of the invention, a packet is buffered upon or after ingress thereof to the system, and a packet for egress from the system assembled from new or modified packet data and unmodified packet data as retrieved directly from the buffer. According to a sixth aspect of the invention, a system for preventing re-ordering of packets in a packet processing system is provided. A seventh aspect of the invention involves any combination of one or more of the foregoing.